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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,373	08/24/2001	Pieter Meijer	01851366	3906

7590 02/08/2005

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EXAMINER

SING, SIMON P

ART UNIT	PAPER NUMBER
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2645

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/939,373

Applicant(s)

MEIJER ET AL.

Examiner

Simon Sing

Art Unit

2645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-10, 20 and 21 is/are rejected.
- 7) ☒ Claim(s) 11-19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because functional blocks in figures 1 and 2 are not labeled. For example, in figure 1, block 7 should be labeled as "Filter", and block 8 should be labeled as "Tuner", and so on according to the Specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: "The receiver 3" recited in line 11, page 12 should be changed to: "The receiver 5" in accordance with rest of the Specification and the Drawings.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. Claims 1-10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindenmeier et al. US 6,169,888 in view of Ohe et al. US 4,742,567.

3. Regarding claim 1, Lindenmeier discloses a receiving antenna diversity system in figure 2, comprising:

a receiver 20 having an interference (multi-path) detector 18, which also includes a pulse (indicating signal 10) generator (column 3, lines 45-52);

an antenna device 21 including a plurality of FM antennas (A1, A2) and a controllable switching circuit 5 for sequentially switching through one of said plurality of antennas to the receiver via an antenna cable 12 upon receiving a control signal 26 (column 3, lines 31-4352-58); and

a differentiator (not shown) for differentiating a pulse (signal 10) into the signal 26 (column 3, lines 52-58).

Lindenmeier fails to explicitly teach that the signal 26 is a pulse signal pair having a first signal pulse followed by a second signal pulse having a signal polarity opposite to the signal polarity of the first signal pulse, and the signal pair having a wave form varying symmetrically around a reference level, even though, it is inherent that when a rectangular pulse (such as a binary indicating signal 10) is differentiated, a signal pair is generated since a rectangular pulse has a rising edge (positive spike) and a falling edge (negative spike).

However, Ohe discloses an automobile antenna diversity system comprising a plurality of antennas 40 and 42, an antennal switch circuit 88, and a multi-path detector 70 in figure 6. Ohe teaches a signal differentiator 80 for differentiating a pulse 104 (third line of figure 7) into a pulse signal pair (fourth line of figure 7) having a first signal pulse followed by a second signal pulse having a signal polarity opposite to the signal polarity of the first signal pulse, and the signal pair having a wave form varying symmetrically around a reference level.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Lindenmeier's reference with the teaching of Ohe, so that the output of a differentiator would have comprised a pulse signal pair having a first signal pulse followed by a second signal pulse having a signal polarity opposite to the signal polarity of the first signal pulse, and the signal pair having a wave form varying symmetrically around a reference level, because such a modification would clarified Lindenmeier's teaching of a differentiator.

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3.2 Regarding claim 2, as discussed in claim 1, Lindenmeier teaches a differentiator to generate a pulse signal pair.

3.3 Regarding claim 3, it is old and well known in the art that a differentiator comprises a RL circuit (section 16-4, figure 16-4, Electronic Engineers' Handbook, McGraw-Hill Book Company, 1982).

3.4 Regarding claim 4, Lindenmeier teaches that the differentiator is coupled to a first RF (FM) blocking filter 13 (figure 2; column 4, lines 17-26).

3.5 Regarding claim 5, it is inherent that a blocking (shunt) filter 13 comprises a LC circuit having a resonance frequency corresponding to the central frequency of a received RF signal.

3.6 Regarding claim 6, Lindenmeier teaches a switching circuit 11 (detector) having an input coupled to the antenna cable 12 through a blocking second filter 13 and an output coupled to a selector switch 5 (figure 2; column 4, lines 31-36). It is inherent that a detector has a reference level, or threshold in order to detect an input signal.

3.7 Regarding claim 7, Lindenmeier teaches detecting a control signal and selecting an antenna based on the control signal (column 4, lines 31-38). Lindenmeier fails to teach that switching circuit 11 comprises a counter (counting device) at its output.

However, Ohe further teaches a counter between a pulse signal pair detector 82 and an antenna switch 88 for selecting a desirable antenna (figure 6; column 6, lines 51-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Lindenmeier's reference, which was modified by Ohe, with the further teaching of Ohe, so that the switching circuit 11 would have comprised a counter and the output of the counter would have generated a control signal for selecting an antenna, and because such a modification would clarified Lindenmeier's teaching of how the output of switching circuit was generated from an input control signal.

3.8 Regarding claim 8, signal selecting circuit 13 is a blocking filter for blocking received RF signal going to switching circuit 11 (column 6, lines 17-26).

3.9 Regarding claim 9, it is inherent that a blocking (shunt) filter 13 comprises a LC circuit having a resonance frequency corresponding to the central frequency of a received RF signal.

3.10 Regarding claim 10, adding a component to a circuit would have been a matter of design choice.

3.11 Regarding claim 20, the system in claim 1 is part of a receiver (there are additional circuits, such as IF filters, RF, IF and audio amplifiers, etc.).

3.12 Regarding claim 21, the system in claim 1 is part of an antenna device for supplying a selective RF signal to a receiver.

Allowable Subject Matter

4. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The current invention discloses a multi-antenna receiver system, comprising a plurality of FM antennas and an AM antenna. An AM signal compensation circuit located in an antenna portion has a first input coupled to a cable connecting the antenna portion to a receiver, a second input coupled to the AM antenna, and an output coupled to an antenna selecting circuit. Lindenmeier fails to teach an AM antenna compensation circuit. Taniguchi et al (US 5,263,190) discloses a receiver system with AM antenna 31 and FM antennas 21 and 22 in figure 2. Taniguchi teaches a switch 23 for selecting one of the FM antennas but fails to teach an AM compensation circuit.

5. Claims 12-19 would be allowable for being dependents of claim 11.

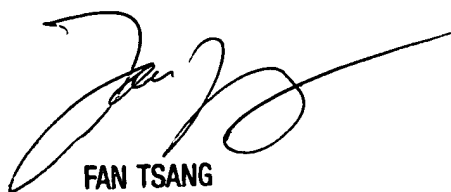
Conclusion

6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Simon Sing whose telephone number is (703) 305-3221. The examiner can normally be reached on Monday - Friday from 8:30 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang, can be reached at (703) 305-4895. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.



S. Sing.

02/07/2005



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